

**Henry P. Roybal**

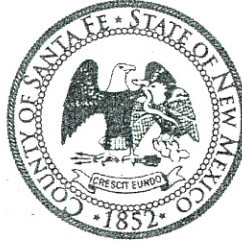
Commissioner, District 1

**Anna Hansen**

Commissioner, District 2

**Robert A. Anaya**

Commissioner, District 3



**Anna T. Hamilton**

Commissioner, District 4

**Ed Moreno**

Commissioner, District 5

**Katherine Miller**

County Manager

## **MEMORANDUM**

**Date:** October 10, 2017

**To:** Board of County Commissioners

**From:** Chris Hyer, Economic Development Manager

**Via:** Penny Ellis-Green, Growth Management Director  
Katherine Miller, County Manager

**Item:** Request Approval of a Sub-Lease Agreement No. 2018-0117-GM between Santa Fe County and Black Mesa Wireless, LLC to use the REDI Net fiber lines to the Pojoaque Pueblo Fire Station for a hook up to an internet service provider in order to provide broadband service to end-users in the Pojoaque Valley. (Growth Management/Chris Hyer)

### **SUMMARY:**

The Pojoaque Fire Station has lines from the REDI Net fiber optic network running to it and Black Mesa Wireless (a private internet service provider) would like to connect into the REDI Net lines in order to provide broadband service to Pojoaque Valley broadband users. This will require no modifications to Santa Fe County's building, and Black Mesas Wireless will lease space in the communications room to house equipment attached to a wall. The lease will be for \$100.00/month.

### **BACKGROUND:**

Santa Fe County is a signature to the Joint Powers Agreement (JPA) that created a quasi-government entity known as the Regional Economic Development Initiative Network (REDI Net). REDI Net was created as a rural broadband middle-mile network providing service to Santa Fe, Rio Arriba and Los Alamos Counties, the City of Espanola, the Pueblo of Pojoaque, the Pueblo of Tesuque, the Pueblo Ohkay Owingeh and Santa Clara Pueblo. The North Central New Mexico Economic Development District is also a signature to the JPA and initially was the fiscal agent – now Rio Arriba County is the fiscal agent.

The network is 150-miles of 144-288 strands of fiber-optics that was created with a Federal grant connecting the physical locations of the members of the JPA. The members of the JPA with REDI Net infra-structure are the owners of those facilities; however, the use of the broadband service may only be used by community anchor institutions or other public benefit agencies such as government buildings, schools, libraries, health-care providers, etc. The REDI Net network can only provide

services to non-anchor institution end-users through third party contractors that are contracted with REDI Net directly, and then sell broadband service to third party end-users. Black Mesa Wireless is such a third party contractor.

This sub-lease allows Black Mesa Wireless to mount its equipment in the communications room at the fire station (built on sovereign land owned by the Pueblo of Pojoaque) connecting their equipment to the REDI Net lines. The distribution of broadband will be through a non-penetrating roof mounted microwave antennae that is connected to the output of Black Mesa Wireless' equipment via existing REDI Net conduit. The lease amount of \$100/month will be paid by Black Mesa Wireless to Santa Fe County.

#### Conclusion

This is the first opportunity that Santa Fe County has to help expand the availability of broadband service through the use of the REDI Net network of fiber optic lines. This opportunity will help residents of the Pojoaque Valley by allowing a third party internet service provider provide access to high speed broadband.

#### Exhibits

- Exhibit A – “Exhibit A” Pueblo Consent - Letter from Governor Joseph Talachy, Pueblo of Pojoaque
- Exhibit B – WISP Switch Specifications
- Exhibit C – Junction Box Description
- Exhibit D – APC Power Supply Operation Manual
- Exhibit E – Cloud Core Router Specifications Sheet
- Exhibit F – Tripp-Lite Wall-Mount Rack Enclosure Cabinet
- Exhibit G – Air Fiber Radio Data Sheet
- Exhibit H – Symmetrical Horn Antenna Data Sheet
- Exhibit I – Mimosa Signal Generator Specification Sheet
- Exhibit J – Lease Agreement Between Pueblo of Pojoaque and Santa Fe County for the Fire Station



**SUBLEASE AGREEMENT  
BETWEEN SANTA FE COUNTY AND  
BLACK MESA WIRELESS, LLC**

This Sublease Agreement ("Sublease" or "Agreement") is between **Santa Fe County** ("Sublessor" or "County"), a political subdivision of the State of New Mexico, and **Black Mesa Wireless, LLC** ("Sublessee" or "Black Mesa"), a New Mexico limited liability corporation. Sublessor and Sublessee may be referred to herein as the "Parties".

**RECITALS**

A. The County owns and operates the Pojoaque Fire Station building ("Fire Station") located at 17919 US Hwy 84/295, Pojoaque, NM 87506. The County constructed the Fire Station on real property owned by the Pueblo of Pojoaque ("Pueblo") and held in trust by the United States pursuant to the *Lease Agreement Between the Pueblo of Pojoaque and the County of Santa Fe for a Fire Station* ("Fire Station Lease"), dated December 22, 1999; and

B. Paragraph A, Section 10, of the Fire Station Lease provides that the County may sublease the premises subject to the Fire Station Lease with the Pueblo's written consent. Exhibit A hereto is a copy of the Pueblo's written consent to this Sublease; and

C. Black Mesa is an Internet Service Provider ("ISP") that provides last-mile Internet service to its customers via the REDI Middle-Mile Network ("REDI Net") in accordance with the *Joint Powers Agreement for Management of the REDI Middle-Mile Broadband Network* ("JPA") between the North Central New Mexico Economic Development District and several local governments and Pueblos, including the Santa Fe County and the Pueblo of Pojoaque. The New Mexico Department of Finance and Administration approved the JPA on December 26, 2011; and

D. The JPA created the REDI Net Board, which offers wholesale bandwidth to all qualified ISPs, including Black Mesa. In addition, the REDI Net Board provides high-speed broadband services to "community anchor institutions." The Fire Station is designated by the County as a community anchor institution within the meaning of the JPA, and the REDI Net network has been extended into the Fire Station communications room. In consideration of this Sublease, the REDI Net Board has agreed to provide Internet service to the Fire Station at no charge pursuant to a separate service level agreement between the REDI Net and the County; and

E. Black Mesa desires to extend its last-mile service within the Pojoaque area by installing the equipment described on Exhibits B through Exhibit I to this Sublease, or similar equipment, both within the Fire Station and on the roof of the Fire Station. Black Mesa will connect its equipment to the REDI Net equipment existing within the Fire Station, which will be connected via cables running through an internal conduit to an eight-foot tower to be installed by Black Mesa on the roof of the Fire Station. The equipment described on Exhibit B through Exhibit F will be installed within the Fire Station; the equipment described on Exhibit G through Exhibit I will be installed on the tower on the roof of the Fire Station. The equipment described in Exhibit B through Exhibit I and the roof tower are herein collectively described as the "Equipment;" and

F. The purpose of this Sublease is to set out the terms and conditions under which Black Mesa will install, operate, and maintain the Equipment at the Fire Station.

### AGREEMENT

NOW, THEREFORE, Sublessor and Sublessee agree as follows:

**1. INCORPORATION OF RECITALS.** The Recitals above are incorporated into and made a part of this Sublease by reference.

**2. GRANT OF SUBLEASE.** For and in consideration of and subject to the terms and conditions of this Sublease, Sublessor hereby subleases to Sublessee the areas of the Fire Station described on Exhibit J to this Sublease ("Sublease Premises") for the sole purpose of installing, operating, maintaining, and replacing the Equipment, or similar equipment, including such ancillary cables, devices, and appurtenances as may be necessary to connect to REDI Net and receive and transmit continuous broadband service to Sublessee's customers. Sublessee shall access the Sublease Premises from Ogo Wii Road and may use two parking places in the Fire Station parking lot during Sublessee's use of the Sublease Premises. The following terms and conditions shall apply to Sublessee's use of and access to the Sublease Premises:

**a.** Before entering the Sublease Premises, Sublessee shall contact the Fire Station to provide notice at least 24 hours in advance; *provided*, however, that in the case of emergencies, Sublessee may provide less than 24 hours' notice. Upon entering the Sublease Premises, Sublessee shall immediately inform Fire Station personnel of the purpose and estimated duration of the entry. Except in the case of emergencies, Sublessee shall limit its use of the Sublease Premises to normal business hours.

**b.** Sublessee's Equipment and use of the Sublease Premises shall not at any time interfere with Fire Station operations, County internet service, or damage the Fire Station building.

**c.** Sublessee shall install, operate, and maintain the Equipment in a safe and workman like manner in compliance with all applicable federal, state, and local laws, regulations, and codes.

**d.** In securing the tower to the Fire Station roof, Sublessee shall use non-penetrating weights. Sublessee shall position the tower to avoid or minimize casting a shadow on the solar panels located on the Fire Station roof.

**e.** In installing the Equipment inside the Fire Station, Sublessee shall utilize the existing REDI Net board located in the communications room, and shall interconnect this Equipment to the roof tower using the existing REDI Net conduit. No Equipment shall be attached to the outside walls of the Fire Station.

**f.** Sublessor shall not be responsible for maintaining, securing, or protecting the Equipment against damage or loss. Except as may be necessary to protect the health and safety of



Fire Station personnel or the public from imminent threat or to prevent serious damage to the Fire Station, Sublessor shall not move, disconnect, or disturb the Equipment or otherwise interfere with Sublessee's operations.

g. Sublessee may use electricity from the Fire Station to power its Equipment, not to exceed 200W of continuous load; *provided*, however, that Sublessor shall have no responsibility for any damage to the Equipment caused by a power surge, power failure, or other disruption in or variance from normal electricity service.

h. If necessary to accommodate changed or unanticipated circumstances, the location of the Sublease Premises at the Fire Station may be modified in accordance with a written agreement between the Sublessee and the County Fire Chief.

i. This Sublease is granted under and subject to the Fire Station Lease. In using the Sublease Premises, Sublessee shall not violate any terms or conditions of the Fire Station Lease.

j. The Equipment is and shall remain the personal property of Sublessee.

3. **EFFECTIVE DATE.** The Effective Date of this Sublease shall be the 1<sup>st</sup> day of the month immediately following the date of last signature by the parties hereto.

4. **TERM.** The term of this Sublease shall begin on the Effective Date and end at midnight on the 4<sup>th</sup> anniversary of the Effective Date, unless terminated earlier as herein provided. This Sublease shall automatically renew for successive four-year terms; *provided* however, that either Party may prevent renewal of this Sublease by mailing a Notice of Non-Renewal at least 30 days prior to the expiration of the then current Sublease term; and *provided further* that Sublessor may condition renewal on Sublessee's agreement to an increase in rent in accordance with the increase in the Consumer Price Index (CPI-U), if any, over the prior Sublease term; and *provided further* that the term of this Sublease and all renewals thereof shall not exceed 20 years, subject to 8.D below (Termination of Fire Station Lease).

5. **RENT.** Sublessee shall pay rent of \$100.00 per month, due and payable in advance on the first of each month, with the first payment due on the Effective Date. Time is of the essence in the performance of this Sublease. If payment is not received on or before the fifth of the month, the rent payment shall be delinquent. Interest on delinquent rent payments shall accrue from the date the payment became due at the rate of one percent per month.

6. **REMOVAL OF EQUIPMENT.** Upon termination of this Sublease, Sublessee shall remove all of the Equipment from the Sublease Premises and restore the Sublease Premises to their condition existing prior to the Effective Date. Any Equipment remaining at the Fire Station 10 days after termination of this Sublease shall conclusively be deemed abandoned by Sublessee and Sublessor may dispose of it as Sublessor deems appropriate and as consistent with the Fire Station Lease.

7. **ASSIGNMENT AND SUBLETTING.** Sublessee may assign this Sublease only upon Sublessor's prior written consent, and Sublessor may grant its consent subject to such conditions as it deems appropriate. Sublessee shall not sublease the Sublease Premises.

8. **TERMINATION.**

A. Material Breach. A material breach of this Sublease shall constitute a default. In the event of default, the non-breaching party may mail by certified mail, return receipt requested, written notice of breach to the other party, describing the nature of the breach. If the breaching party does not cure the default within 15 days after the non-breaching party mails the notice of breach, or such longer period as the non-breaching party may specify in the notice, the non-breaching party may terminate this Sublease by mailing a notice of termination to the breaching party. This Sublease shall thereafter terminate on the date specified in the termination notice, which shall be no less than 10 days after the date of the termination notice.

B. Convenience. Sublessor may terminate this Sublease for convenience by providing 90-days advance written notice of termination to Sublessee. Sublessee may terminate this Sublease for convenience by providing 30-days advance written notice of termination.

C. Destruction of Fire Station. If the Fire Station is destroyed, in whole or in part, such that Sublessee cannot safely access the Sublease Premises or operate the Equipment for longer than 30 days, Sublessee or Sublessor may terminate this Sublease by mailing a written notice of termination to the other party by certified mail, return receipt requested, in which case this Sublease shall terminate as of the date of such notice. Alternatively, Sublessor and Sublessee may execute a written agreement that allows Sublessee to abate 100% of the rent due under this Sublease until Sublessee can safely access the Sublease Premises and resume full operation of the Equipment; *provided*, however, Sublessor shall have no obligation to Sublessee to rebuild the Fire Station or enter into such agreement.

D. Termination of Fire Station Lease. This Sublease shall terminate automatically upon termination of the Fire Station Lease. Upon receiving notice of termination of the Fire Station Lease, Sublessor shall promptly inform Sublessee of such notice.

9. **NO WAIVER.** The failure of Sublessor to enforce any requirement of this Sublease or to exercise any option it has under this Sublease shall not constitute a waiver of Sublessor's right to do so.

10. **NO WARRANTIES.** Sublessee accepts the Sublease Premises "as is." The Sublessor makes no warranties or representations of any kind, express or implied, concerning the Sublease Premises, including but not limited to any condition of the Sublease Premises or the Sublessor's title. The Sublessor specifically disclaims any warranty of merchantability, marketability, or fitness or suitability for a particular purpose. Sublessee acknowledges that it is not relying upon any representation, statement or other assertion with respect to the Sublease Premises, but is relying solely upon its examination thereof.



**11. COMPLIANCE WITH LAW.** Sublessee shall comply with all federal, state, and local laws including laws of the Pueblo of Pojoaque, applicable to Sublessee's use of the Sublease Premises.

**12. INDEMNIFICATION.** Sublessee shall hold harmless, indemnify, and defend the County and the County's governing body, elected and appointed officials, employees, and agents, in both their official and individual capacities, from any and all liability, claim, cause of action, loss, damage, or expense arising out of or relating to the Equipment or Sublessee's use of the Sublease Premises. In the event that any action, suit or proceeding is brought against Sublessee in connection with the Equipment or Sublessee's use of the Sublease Premises, Sublessee shall promptly notify the County. Any cause of action of the County to enforce this provision shall not be deemed to accrue until the County's actual discovery of the liability, claim, loss, damage, or expense. This Section shall survive for three years after termination of this Sublease.

**13. INSURANCE.**

**13.1 COMMERCIAL GENERAL LIABILITY.** Sublessee shall maintain commercial general liability insurance, including without limitation contractual liability insurance (specifically concerning the indemnity provisions of this Sublease with the County), Personal Injury (including bodily injury and death), and Property Damage for liability arising out of or relating to the Equipment and Sublessee's use of the Sublease Premises. The insurance policy shall contain no exclusion or limitation for independent contractors working on the behalf of the named insureds. At a minimum, the insurance policy shall provide coverage of \$1,000,000 per each occurrence and have a general aggregate limit of no less than \$2,000,000. The policy or policies shall be issued in the name of Sublessee and shall name Santa Fe County and the Pueblo of Pojoaque as additional insureds.

**13.2 CLAIMS MADE.** If any of the insurance coverage required under this Sublease is written on a claims-made basis, Sublessee, at its option, shall either (i) maintain said coverage for at least three years following the termination of this Sublease with coverage extending back to the Effective Date; (ii) purchase an extended reporting period of not less than three years following the termination of this Sublease; or (iii) acquire a full prior acts provision on any renewal or replacement policy.

**13.3 CANCELLATION OF INSURANCE.** All insurance policies required under this Sublease shall be maintained by Sublessee until completion of all of Sublessee's obligations under this Sublease. Each insurance policy supplied by Sublessee must be endorsed to provide that the coverage shall not be suspended, voided, cancelled, or reduced in coverage or in limits except after 10 day's written notice in the case of non-payment of premiums, or 30 day's written notice in all other cases. This notice requirement does not waive the insurance requirements stated herein. Sublessee shall immediately obtain replacement coverage for any insurance policy that is terminated, canceled, non-renewed, or whose policy limits have been exhausted or upon insolvency of the insurer that issued the policy.

**13.4 COMPANY RATING.** All insurance policies required under this Sublease shall be issued by a company or companies admitted to do business in New Mexico and listed in the current "Best's Key Rating Guide" publication with a minimum rating of A-.

**13.5 PRIMARY INSURANCE.** All insurance policies required under this Sublease shall be primary to and not contributing to all insurance or self-insurance maintained by the County. An endorsement shall be provided on all policies, except professional liability/errors and omissions, which shall waive any right of recovery (waiver of subrogation) against the County.

**13.6 NO LIMITATION.** Insurance coverage in the minimum amounts set forth herein shall not be construed to relieve Sublessee for any liability, whether within, outside, or in excess of such coverage, and regardless of solvency or insolvency of the insurer that issues the coverage, or to preclude the County from taking such other actions as are available to it under any other provision of this Sublease or otherwise under applicable laws.

**13.7 FAILURE TO MAINTAIN INSURANCE.** Failure of Sublessee to maintain all such insurance in effect at all times required by this Sublease shall constitute a material breach.

**13.8 PROOF.** On or before the Effective Date, Sublessee shall deliver to the Sublessor certificates of insurance indicating that Sublessee has complied with the provisions of this Section. Sublessee shall provide the County further proof of insurance within 10 days of the Sublessor's request for such proof.

#### **14. HAZARDOUS MATERIALS.**

**14.1** Sublessee shall not cause or allow the handling, use, manufacture, storage or disposal in or about the Sublease Premises any flammable substances (meaning any substance that has a flash point of 80 degrees Fahrenheit or lower, as determined by the Tagliabue Open Cup Tester), explosives, radioactive materials, hazardous wastes or materials, toxic wastes or materials, or other similar substances, petroleum products or derivatives or any substance (collectively "Hazardous Materials") subject to regulation by or under any federal, state, or local laws relating to the protection of the environment or the keeping, use, or disposition of environmentally hazardous materials, substances, or wastes, presently in effect or hereafter adopted, all amendments to any of them, and all rules and regulations issued pursuant to any of such laws.

**14.2** Notwithstanding the foregoing, and subject to the County's prior consent, Sublessee may handle, store, use or dispose of products containing small quantities of Hazardous Materials to the extent customary and necessary to carry out the uses permitted under this Sublease; *provided* that Sublessee shall always handle, store, use, and dispose of any such Hazardous Materials in a safe and lawful manner and never allow such Hazardous Materials to contaminate the Sublease Premises or the environment.

**15. NOTICES.** Except as otherwise provided in this Sublease, all notices relating to this Sublease shall be in writing and shall be mailed by first class mail as follows:



To the County: Santa Fe County Manager  
P.O. Box 276  
102 Grant Avenue  
Santa Fe, New Mexico 87504-0276

To Sublessee: Black Mesa Wireless, LLC  
PO BOX 4164  
Española, NM 87533

A party may change its address of record under this Sublease by mailing notice of the new address to the other party by first class mail.

**16. DELEGATION OF AUTHORITY TO COUNTY MANAGER.** The County Manager shall have authority to perform this Sublease on behalf of the County, including without limitation the authority to decide whether to renew or terminate this Sublease, increase the rent under this Sublease, and execute amendments to this Sublease, all in accordance with terms and conditions herein. The authority delegated to the County Manager under this Section includes the authority to amend the Sublease to incorporate any modifications required by DFA; or, if DFA determines that its approval of this Sublease is not required, to amend this Sublease to comport with DFA's determination.

**17. MISCELLANEOUS TERMS:**

**17.1 SCOPE OF SUBLEASE.** This Sublease constitutes the entire agreement and understanding between the County and Sublessee and supersedes any and all prior agreements, and understandings, oral or written, relating to the subject matter hereof.

**17.2 REMEDIES NOT EXCLUSIVE.** The remedies provided in this Sublease are not exclusive, and the parties shall have in addition thereto any remedy otherwise available at law or equity.

**17.3 NO THIRD-PARTY BENEFICIARIES.** The parties do not intend this Sublease to confer any benefit on any person or entity that is not a party to this Sublease. Only the County and the Sublessee may enforce this Sublease.

**17.4 SEVERABILITY.** If a court of law deems a provision of this Sublease invalid, the validity of the remaining provisions shall be deemed severable therefrom and this Sublease shall remain in force and effect as to the remaining provisions unless the purposes of this Sublease cannot reasonably be carried out without the invalid provisions. If this Sublease is deemed invalid, Sublessee shall not be entitled to a refund of any rent or other sums paid under this Sublease.

**17.5 SURVIVAL.** The provisions of this Sublease which relate to periods subsequent to the expiration of the Term shall survive expiration.

**17.6 NEUTRAL CONSTRUCTION.** Both parties fairly and fully negotiated the terms of this Sublease and both were represented by counsel. If a court deems any provision of this

Sublease ambiguous, such ambiguity shall not be construed against either party and shall be construed neutrally so as to carry out the intent of the parties.

**17.7 LIMITATIONS ON COUNTY LIABILITY.** As a political subdivision of the State of New Mexico, any potential liability of the County is limited by state law, including but not necessarily limited to the Batement Act, NMSA 1978, Section 6-6-11, the New Mexico Tort Claims Act, NMSA 1978, Sections 41-4-1 through 41-4-30, the Anti-Donation Clause of the New Mexico Constitution, N.M. Const. Article 9, Section 14, and NMSA 1978, Section 37-1-23. Any obligation of the County to expend money under this Sublease shall be contingent upon sufficient appropriations by the Board of County Commissioners ("Board"), which shall be at the Board's sole discretion.

**17.8 SUCCESSORS.** This Sublease shall be binding on the parties' successors and heirs; *provided*, however, that Sublessee shall not assign this Sublease or sublet the Sublease Premises except as expressly permitted under this Sublease.

**17.9 CAPTIONS.** Section headings in this Sublease are used solely for convenience, and shall be disregarded in the construction of this Sublease.

**17.10 EXHIBITS.** All exhibits attached to this Sublease are incorporated into and made a part of this Sublease by reference.

**17.11 TIME OF THE ESSENCE.** Time is hereby expressly declared to be of the essence in the performance of this Sublease.

**17.12 AMENDMENT.** This lease shall not be amended except by an instrument in writing executed by the Sublessor and Sublessee; *provided*, however, that the location of the Sublease Premises within the Fire Station may be modified as provided herein above.

**17.13 APPLICABLE LAW; VENUE.** This Sublease shall be governed by the laws of the State of New Mexico. If a conflict arises between the parties concerning this Sublease, the First Judicial State Court District, Santa Fe County, shall be the exclusive venue.

**17.14 NO PARTNERSHIP.** Nothing in this Sublease shall be construed as creating a partnership or joint venture between the County and Sublessee.

**SUBLESSOR: SANTA FE COUNTY**

By: \_\_\_\_\_  
Henry P. Roybal, Chair  
Santa Fe Board of County Commissioners

**ATTESTATION:**


BLACK MESA WIRELESS SUBLEASE  
Page 8 of 10



Date: \_\_\_\_\_

Date: 9/26/2017

Date: 9/26/2017

By:   
Brock Tice  
President (title)

Date: 2017-09-26

[illegible]

OFFICIAL SEAL  
Ambra Baca  
NOTARY PUBLIC  
STATE OF NEW MEXICO  
My Commission Expires: 2/1/24

Amelia Baca  
Notarial Officer

(Seal, if any)

My commission expires: 8/1/21

**APPROVED BY: NEW MEXICO DEPARTMENT OF FINANCE AND  
ADMINISTRATION, LOCAL GOVERNMENT DIVISION**

Date: \_\_\_\_\_

Title: \_\_\_\_\_



EXHIBIT A

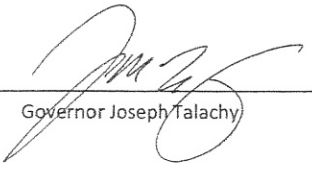
SUBLEASE AGREEMENT  
BETWEEN SANTA FE COUNTY AND  
BLACK MESA WIRELESS, LLC

Pursuant to Section Ten, Paragraph A of the *Lease Agreement Between The Pueblo of Pojoaque And The County Of Santa Fe For A Fire Station*, dated December 22, 1999, the Pueblo of Pojoaque hereby gives its consent to the *Sublease Agreement Between Santa Fe County and Black Mesa Wireless, LLC* and to the installation of the equipment described in Paragraph E and Exhibits to the Sublease.

Any written amendments to the Sublease will be subject to approval by the Pueblo of Pojoaque.

PUEBLO OF POJOAQUE:

BY:

  
Governor Joseph Talachy

DATE:

9/29/17

EXHIBIT

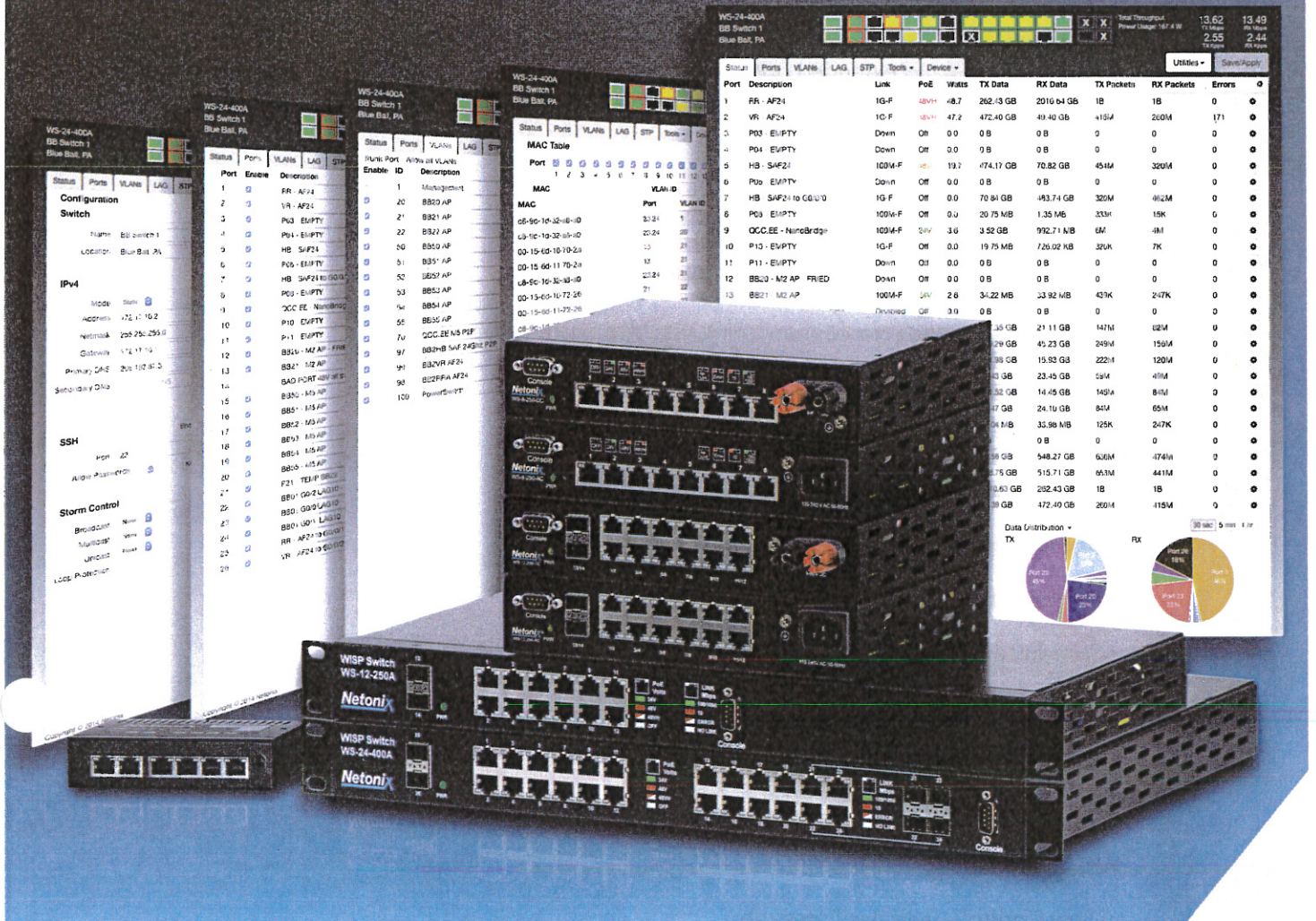
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Carrier Grade

# Spec Sheet Quick Start



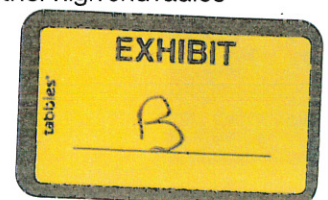
## Models

WS-24-400A  
WS-24-400B  
WS-12-250A  
WS-12-250B  
WS-12-250-DC  
WS-12-250-AC  
WS-12-DC  
WS-10-250-AC  
WS-8-250-DC  
WS-8-250-AC  
WS-8-150-DC  
WS-8-150-AC  
WS-6-MINI

# Netonix<sup>®</sup> WISP Switch<sup>™</sup>

Managed PoE+ Gigabit Switches with SFP

- Gigabit Ethernet RJ45 and SFP Ports
- Non-Blocking Throughput Switching Performance
- Software Configurable Passive PoE
- Powers airFIBER<sup>™</sup> and other high end radios





## Introduction

The Netonix® WISP Switch™ product line was designed specifically for the WISP industry with a rugged chassis and extended operating temperature range. It features a simple yet powerful user interface providing the software features WISPs need in a switch.

## Software Features

- LAG – Port aggregation LACP/Static
- STP / RSTP / MSTP (MSTP available with firmware v2.0)
- Port mirroring and remote monitoring via Wire Shark with CPSP
- VLAN dot1Q/QinQ/Port Trunking
- SNMP - complete statistical reporting
- SMTP alerts - configurable
- Bandwidth limiting per port
- Ping watch dog per port
- Scheduled port bouncing
- Cable Diagnostics
- Loop Protection
- DHCP Snooping
- IGMP Snooping
- Flow Control - with back pressure
- Storm Control
- Multicast Filtering
- Port Isolation
- Auto TFTP Backup on Config Change
- UDP - Ubiquiti Discovery Protocol
- CDP - Cisco Discovery Protocol
- Security - access control list and login tarpit

The WISP Switch™ features the ability to power many popular 24V, 48V/50V passive PoE devices from many manufacturers including the Ubiquiti Networks® airMAX™, UniFi™, SAF™, MIMOSA™, Ligowav™, and airFIBER™ product lines.



## Configuration Interface

To access the Configuration Web User Interface perform the following steps:

- Ensure that your computer is connected to one of the ports on the WISP Switch™.
- Configure the Ethernet adapter on your host system with a static IP address in the 192.168.1.x subnet (e.g., 192.168.1.10).
- Launch your web browser and type <https://192.168.1.20> in the address field and press enter.
- The login screen should appear.
- Enter "admin" in the Username and Password fields then click Login.

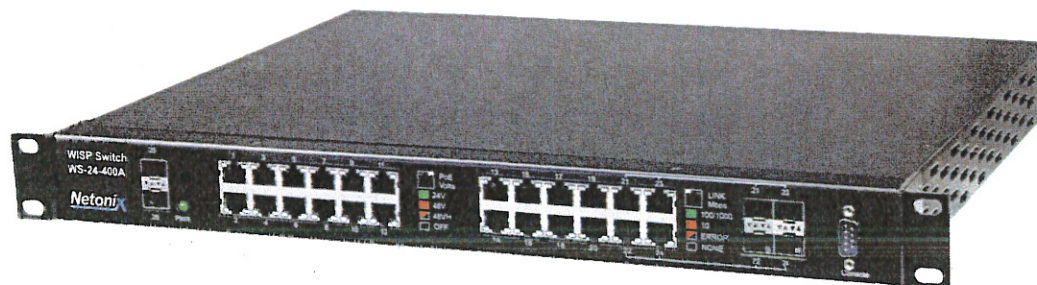
The Configuration Interface should appear, allowing you to configure your WISP Switch™.

## Specifications - WS-24-400A

Manufactured and Assembled	North America
Standard 19" rack mount / Desktop / Wall mount	YES
Dimensions	438mm x 44mm x 356mm
Weight	5kg
Power Input	210-230 & 110-120 VAC
Chassis Earth Ground Lug	YES
Max. Power Consumption	400 Watts
Intelligent Forced Air Cooling With Fan RPM Monitoring	YES
Switch Core and PHYs	Vitesse
Processor	MIPS 24K 416 MHz
System Memory	128 MB
Flash Storage	16 MB
Total Non-Blocking Line Rate	26 Gbps
Certifications	CE, FCC, IC
Operating Temperature	-25 to 55°C (-13 to 131° F)
Operating Humidity	5 to 95% Non-Condensing
Console Port	RS-232
Ethernet Ports	(24) 10/100/1000 Ethernet Ports (2) SFP Ports
Passive PoE Configured Per Port via UI	24V 0.75A pins 4,5(+) 7,8(-) 48V 0.75A pins 4,5(+) 7,8(-) 48VH 1.5A pins 1,2,4,5(+) 3,6,7,8(-)
PoE Out Voltage Range	48-50 VDC / 22-24 VDC
Passive PoE Current Sensors Per Port	YES
ESD Rating	24 kV Air / 24 kV Contact

<b>24V PoE Ports</b> Pins 4,5 (+) Pins 7,8 (-) .75A	<b>48V PoE Ports</b> Pins 4,5 (+) Pins 7,8 (-) .75A	<b>48VH PoE Ports</b> Pins 1,2,4,5 (+) Pins 3,6,7,8 (-) 1.5A
Ports 01-24	Ports 01-24	Ports 01-04

\*RevD and newer boards



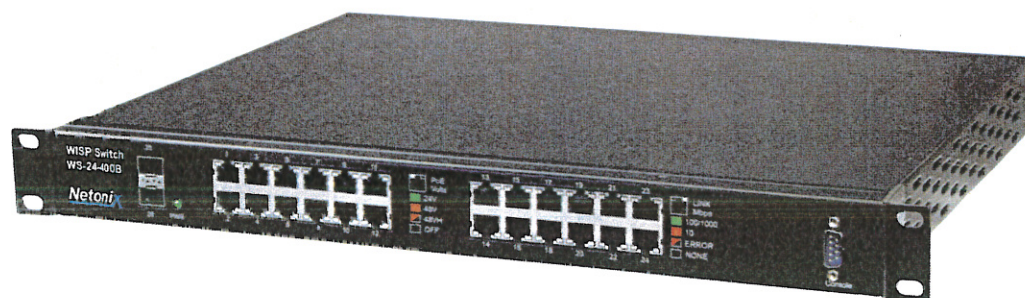


## Specifications - WS-24-400B

Manufactured and Assembled	North America
Standard 19" rack mount / Desktop / Wall mount	YES
Dimensions	438mm x 44mm x 356mm
Weight	5kg
Power Input	210-230 & 110-120 VAC
Chassis Earth Ground Lug	YES
Max. Power Consumption	400 Watts
Intelligent Forced Air Cooling With Fan RPM Monitoring	YES
Switch Core and PHYs	Vitesse
Processor	MIPS 24K 416 MHz
System Memory	128 MB
Flash Storage	16 MB
Total Non-Blocking Line Rate	26 Gbps
Certifications	CE, FCC, IC
Operating Temperature	-25 to 55°C (-13 to 131° F)
Operating Humidity	5 to 95% Non-Condensing
Console Port	RS-232
Ethernet Ports	(24) 10/100/1000 Ethernet Ports (2) SFP Ports
Passive PoE Configured Per Port via UI	24V 0.75A pins 4,5(+) 7,8(-) 48V 0.75A pins 4,5(+) 7,8(-) 48VH 1.5A pins 1,2,4,5(+) 3,6,7,8(-)
PoE Out Voltage Range	48-50 VDC / 22-24 VDC
Passive PoE Current Sensors Per Port	YES
ESD Rating	24 kV Air / 24 kV Contact

<b>24V PoE Ports</b> Pins 4,5 (+) Pins 7,8 (-) .75A	<b>48V PoE Ports</b> Pins 4,5 (+) Pins 7,8 (-) .75A	<b>48VH PoE Ports</b> Pins 1,2,4,5 (+) Pins 3,6,7,8 (-) 1.5A
Ports 01-24	Ports 01-12	Ports 01-02

\*RevD and newer boards





## Specifications - WS-12-250A

Manufactured and Assembled	North America
Standard 19" rack mount / Desktop / Wall mount	YES
Dimensions	438mm x 44mm x 229mm
Weight	3 kg
Power Input	210-230 & 110-120 VAC
Chassis Earth Ground Lug	YES
Max. Power Consumption	250 Watts
Intelligent Forced Air Cooling With Fan RPM Monitoring	YES
Switch Core and PHYs	Vitesse
Processor	MIPS 24K 416 MHz
System Memory	128 MB
Flash Storage	16 MB
Total Non-Blocking Line Rate	14 Gbps
Certifications	CE, FCC, IC
Operating Temperature	-25 to 55°C (-13 to 131° F)
Operating Humidity	5 to 95% Non-Condensing
Console Port	RS-232
Ethernet Ports	(12) 10/100/1000 Ethernet Ports (2) SFP Ports
Passive PoE Configured Per Port via UI	24V 0.75A pins 4,5(+) 7,8(-) 48V 0.75A pins 4,5(+) 7,8(-) 48VH 1.5A pins 1,2,4,5(+) 3,6,7,8(-)
PoE Out Voltage Range	48-50 VDC / 22-24 VDC
Passive PoE Current Sensors Per Port	YES
ESD Rating	24 kV Air / 24 kV Contact

24V PoE Ports	48V PoE Ports	48VH PoE Ports
Pins 4,5 (+)	Pins 4,5 (+)	Pins 1,2,4,5 (+)
Pins 7,8 (-)	Pins 7,8 (-)	Pins 3,6,7,8 (-)
.75A	.75A	1.5A
Ports 01-12	Ports 01-12	Ports 01-04

\*RevD and newer boards





## Specifications - WS-12-250B

Manufactured and Assembled	North America
Standard 19" rack mount / Desktop / Wall mount	YES
Dimensions	438mm x 44mm x 229mm
Weight	3 kg
Power Input	210-230 & 110-120 VAC
Chassis Earth Ground Lug	YES
Max. Power Consumption	250 Watts
Intelligent Forced Air Cooling With Fan RPM Monitoring	YES
Switch Core and PHYs	Vitesse
Processor	MIPS 24K 416 MHz
System Memory	128 MB
Flash Storage	16 MB
Total Non-Blocking Line Rate	14 Gbps
Certifications	CE, FCC, IC
Operating Temperature	-25 to 55°C (-13 to 131° F)
Operating Humidity	5 to 95% Non-Condensing
Console Port	RS-232
Ethernet Ports	(12) 10/100/1000 Ethernet Ports (2) SFP Ports
Passive PoE Configured Per Port via UI	24V 0.75A pins 4,5(+) 7,8(-) 48V 0.75A pins 4,5(+) 7,8(-) 48VH 1.5A pins 1,2,4,5(+) 3,6,7,8(-)
PoE Out Voltage Range	48-50 VDC / 22-24 VDC
Passive PoE Current Sensors Per Port	YES
ESD Rating	24 kV Air / 24 kV Contact

<b>24V PoE Ports</b> Pins 4,5 (+) Pins 7,8 (-) .75A	<b>48V PoE Ports</b> Pins 4,5 (+) Pins 7,8 (-) .75A	<b>48VH PoE Ports</b> Pins 1,2,4,5 (+) Pins 3,6,7,8 (-) 1.5A
Ports 01-12	Ports 01-06	Ports 01-02

\*RevD and newer boards





## Specifications - WS-12-250-DC

Manufactured and Assembled	North America
Standard 19" rack mount / Desktop / Wall mount	YES
Dimensions	223mm x 181mm x 44mm
Weight	2 kg
Power Input	9-60 VDC
Chassis Earth Ground Lug	YES
Max. Power Consumption	N/A
Intelligent Forced Air Cooling With Fan RPM Monitoring	YES
Switch Core and PHYs	Vitesse
Processor	MIPS 24K 416 MHz
System Memory	128 MB
Flash Storage	16 MB
Total Non-Blocking Line Rate	14 Gbps
Certifications	CE, FCC, IC
Operating Temperature	-25 to 55°C (-13 to 131° F)
Operating Humidity	5 to 95% Non-Condensing
Console Port	RS-232
Ethernet Ports	(12) 10/100/1000 Ethernet Ports (2) SFP Ports
Passive PoE Configured Per Port via UI	24V 1A pins 4,5(+) 7,8(-) 48V 1A pins 4,5(+) 7,8(-) 24VH 2A pins 1,2,4,5(+) 3,6,7,8(-) 48VH 2A pins 1,2,4,5(+) 3,6,7,8(-)
PoE Out Voltage Range	48-50 VDC / 22-24 VDC
Passive PoE Current Sensors Per Port	YES
ESD Rating	24 kV Air / 24 kV Contact

<b>24V PoE Ports</b> Pins 4,5 (+) Pins 7,8 (-) 1A	<b>48V PoE Ports</b> Pins 4,5 (+) Pins 7,8 (-) 1A	<b>24VH PoE Ports</b> Pins 1,2,4,5 (+) Pins 3,6,7,8 (-) 2A	<b>48VH PoE Ports</b> Pins 1,2,4,5 (+) Pins 3,6,7,8 (-) 2A
Ports 01-12	Ports 01-12	Ports 01-04	Ports 01-04





## Specifications - WS-12-250-AC

Manufactured and Assembled	North America
Standard 19" rack mount / Desktop / Wall mount	YES
Dimensions	223mm x 181mm x 44mm
Weight	2 kg
Power Input	210-230 & 110-120 VAC
Chassis Earth Ground Lug	YES
Max. Power Consumption	250 Watts
Intelligent Forced Air Cooling With Fan RPM Monitoring	YES
Switch Core and PHYs	Vitesse
Processor	MIPS 24K 416 MHz
System Memory	128 MB
Flash Storage	16 MB
Total Non-Blocking Line Rate	14 Gbps
Certifications	CE, FCC, IC
Operating Temperature	-25 to 55°C (-13 to 131° F)
Operating Humidity	5 to 95% Non-Condensing
Console Port	RS-232
Ethernet Ports	(12) 10/100/1000 Ethernet Ports (2) SFP Ports
Passive PoE Configured Per Port via UI	24V 1A pins 4,5(+) 7,8(-) 48V 1A pins 4,5(+) 7,8(-) 24VH 2A pins 1,2,4,5(+) 3,6,7,8(-) 48VH 2A pins 1,2,4,5(+) 3,6,7,8(-)
PoE Out Voltage Range	48-50 VDC / 22-24 VDC
Passive PoE Current Sensors Per Port	YES
ESD Rating	24 kV Air / 24 kV Contact

<b>24V PoE Ports</b> Pins 4,5 (+) Pins 7,8 (-) <b>1A</b>	<b>48V PoE Ports</b> Pins 4,5 (+) Pins 7,8 (-) <b>1A</b>	<b>24VH PoE Ports</b> Pins 1,2,4,5 (+) Pins 3,6,7,8 (-) <b>2A</b>	<b>48VH PoE Ports</b> Pins 1,2,4,5 (+) Pins 3,6,7,8 (-) <b>2A</b>
Ports 01-12	Ports 01-12	Ports 01-04	Ports 01-04





## Specifications - WS-12-DC

Manufactured and Assembled	North America
Standard 19" rack mount / Desktop / Wall mount	YES
Dimensions	223mm x 122mm x 44mm
Weight	1 kg
Power Input	37-53 VDC
Chassis Earth Ground Lug	YES
Max. Power Consumption	8+/- watts not including PoE
Intelligent Forced Air Cooling With Fan RPM Monitoring	YES
Switch Core and PHYs	Vitesse
Processor	MIPS 24K 416 MHz
System Memory	128 MB
Flash Storage	16 MB
Total Non-Blocking Line Rate	14 Gbps
Certifications	CE, FCC, IC
Operating Temperature	-25 to 55°C (-13 to 131° F)
Operating Humidity	5 to 95% Non-Condensing
Console Port	RS-232
Ethernet Ports	(12) 10/100/1000 Ethernet Ports (2) SFP Ports
Passive PoE Configured Per Port via UI	24V .75 pins 4,5(+) 7,8(-) 48V .75 pins 4,5(+) 7,8(-) 24VH 1.5A pins 1,2,4,5(+) 3,6,7,8(-) 48VH 1.5A pins 1,2,4,5(+) 3,6,7,8(-)
PoE Out Voltage Range	48-50 VDC / 22-24 VDC
Passive PoE Current Sensors Per Port	YES
ESD Rating	24 kV Air / 24 kV Contact

24V PoE Ports	48V PoE Ports	24VH PoE Ports	48VH PoE Ports
Pins 4,5 (+)	Pins 4,5 (+)	Pins 1,2,4,5 (+)	Pins 1,2,4,5 (+)
Pins 7,8 (-)	Pins 7,8 (-)	Pins 3,6,7,8 (-)	Pins 3,6,7,8 (-)
.75A	.75A	1.5A	1.5A
Ports 01-12	Ports 01-12	Ports 01-04	Ports 01-04

